



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/642,430	08/15/2003	Peter C. Williams	22188/06671	9883
24024	7590	03/24/2006	EXAMINER	
CALFEE HALTER & GRISWOLD, LLP 800 SUPERIOR AVENUE SUITE 1400 CLEVELAND, OH 44114			HEWITT, JAMES M	
			ART UNIT	PAPER NUMBER
			3679	

DATE MAILED: 03/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/642,430	Applicant(s) WILLIAMS, PETER C.	
	Examiner James M. Hewitt	Art Unit 3679	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 7/27/05, 8/19/05, 10/6/05 & 12/22/05.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-64 is/are pending in the application.
- 4a) Of the above claim(s) 45,46,50,51 and 53-58 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-44,47,48,52 and 59-64 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 8/15/03 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10/6/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Claims 45-46, 50-51 and 53-58 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 1/7/05.

Note that claims 46 and 51 are newly withdrawn from further consideration, as each is drawn to a nonelected species. Each claims acme threads as described in the embodiment depicted in Figures 15A-C.

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 194, 318. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required

Art Unit: 3679

corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "314" has been used to designate two different portions of the ferrule in Figure 13. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "316" has been used to designate has been used to designate two different portions of the ferrule in Figure 13. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing

Art Unit: 3679

sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The disclosure is objected to because of the following informalities:

The respective patent numbers for referenced U.S. Applications 09/469,549 and 10/358,946 should be provided as each has issued to patent.

Appropriate correction is required.

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). The specification does not provide proper antecedent basis for the following: the subject matter of claim 49.

Claim Objections

Claims 1-44, 47-49, 52 and 59-64 are objected to because of the following informalities:

The preamble of claims 1, 28, 30, 31 and 34 reads "A tube fitting *for metal tubing*". Yet the body of each claim recites a metal tube. This creates an inconsistency in the claims. Further, it is unclear as to how a tube fitting can said

Art Unit: 3679

to comprise a tube. Applicant is required to amend the preamble of the claims so that they are consistent with the body of the claims. Note that the claims should provide antecedent basis for “fitting”, which is recited throughout the claims.

Also, the preamble of the dependent claims should be amended accordingly.

The preamble of claim 64 reads “A tube fitting *for stainless steel tubing*”.

Yet the body of the claim recites a stainless steel tube. This creates an inconsistency in the claim. Further, it is unclear as to how a tube fitting can said to comprise a tube. Applicant is required to amend the preamble of the claim so that it is consistent with the body of the claim.

In claim 26, line 2, the phrase “on the Vickers scale” should be inserted after “tube end” for clarity.

In claim 28, lines 3-4, the phrase “is adapted to receive a” should be replaced with “receives the” for clarity.

In claim 30, lines 3-4, the phrase “is adapted to receive a” should be replaced with “receives the” for clarity.

In claim 31, lines 3-4, the phrase “is adapted to receive a” should be replaced with “receives the” for clarity.

In claim 34, line 4, the phrase “is adapted to receive a” should be replaced with “receives the” for clarity.

In claim 43, line 2, “beck” should be “back”.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-27, 31-44, 47-49 and 59-64 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 1, 31, 34 and 64, the use of the phrase "at least about" to describe the included angle of the camming surface and the relative hardness of the ferrule renders the claims indefinite. Refer to 2173.05(b).

The term "narrow" in claim 4 is a relative term which renders the claim indefinite. The term "narrow" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 3679

Claim 30 is rejected under 35 U.S.C. 102(b) as being anticipated by Kowal et al (US 4,556,242).

Kowal et al discloses a tube fitting for metal tubing, comprising: a) a metal tube (T) with a tube end; b) a body (11) and nut (17) that can be joined; said body having an interior bore that is adapted to receive a metal tube end along a central longitudinal axis of the fitting; said bore having a camming surface at one end of said bore; (c) said nut having a ferrule drive surface; and d) a ferrule (24) having a forward portion and a back end; said ferrule back end having a ferrule driven surface engaging said nut ferrule drive surface when the fitting is pulled up; said ferrule forward portion including a front end that engages said camming surface to form a seal; said ferrule having a central bore formed by a generally continuous cylindrical interior wall closely received over the tube end during assembly; e) said ferrule front end including a front edge (29) that indents into the tube end (FIG. 2), said ferrule having a portion of said generally cylindrical interior wall radially compressed in a location axially adjacent said indented front edge (FIG. 2) with a compressive stress that decreases in a generally axial direction away from said indented front edge.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which

Art Unit: 3679

said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-8, 11-25, 27-29, ~~30~~³¹, 52 and 62 are rejected under 35 U.S.C.

103(a) as being unpatentable over Kowal et al (US 4,556,242) in view of Bradley (US 2,561,648).

The Kowal et al fitting discloses the claimed device except for the particular angle of the camming surface (13) on the body (11). Bradley discloses a similar pipe joint wherein the camming surface on the body is 45 degrees (col. 2, ll. 18-23). It would have been obvious to one having ordinary skill in the art at the time the invention was made to fabricate the camming surface angle of Kowal et al to be at an angle of 45 degrees as taught by Bradley, in order to provide a more secure coupling for the inserted tube by optimizing the resultant compressive forces between the ferrule and camming surface.

With respect to claim 16, the size of the tube being at least 0.5 inches is a feature that is considered old and well known in the pipe coupling art such that one of ordinary skill in the art would readily recognize that pipes are routinely sized according to the desired need. Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to select a known size on the basis of its suitability for the intended use as a matter of obvious design choice.

With respect to claim 19, Kowal et al fails to teach that the ferrule comprises case hardened stainless steel. Ferrules comprising case hardened stainless steel are considered old and well known in the pipe coupling art. The selection of stainless steel in order to avoid corrosion is known as is case

Art Unit: 3679

hardening the stainless steel in order to increase hardness and strength.

Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice.

With respect to claim 62, Kowal et al fails to teach that the tube is a stainless steel tube. Stainless steel tubes are considered old and well known in the pipe coupling art. The selection of stainless steel in order to avoid corrosion is known. Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice.

Claims 9-10, 31-32, 60-61 and 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kowal et al (US 4,556,242) in view of Bradley (US 2,561,648) and Moreiras et al (US 3,893,716).

The Kowal et al and Bradley combination as noted above discloses the claimed device, however the particular hardness of the ferrule relative to the tube is not specified. Moreiras et al provides a similar type coupling and states that the tube is a low carbon steel having a hardness below 20 on the Rockwell C scale, and requiring the hardness of the tube to be at least 15 points less than the hardness of the cutting edges of the sleeves. The sleeves are preferably of a hardness of 50 on the Rockwell C scale. A hardness of 50 on the Rockwell C scale translates to a Vickers hardness of 513 (HV/10). A hardness of 1 on the Rockwell C scale translates to a Vickers hardness of 160 (HV/10). Moreiras et al

Art Unit: 3679

thus discloses that the hardness of the ferrule is 3.21. This ratio is not 3.3, but is sufficiently close such that one of ordinary skill in the art would expect the relationship between the ferrule and tube to exhibit the same properties. Further, it is envisaged to be within the scope of Moreiras et al to make the sleeves harder than 50 Rc. It would have been obvious to one having ordinary skill in the art at the time the invention was made to fabricate the degree of hardness between the tube and the ferrule as taught by Moreiras et al in order to provide a more secure coupling for the inserted tube by optimizing the bite into the tube by the ferrule without over-deforming the tube and causing leakage at the bite area.

With respect to claim 63, Kowal et al fails to teach that the tube is a stainless steel tube. Stainless steel tubes are considered old and well known in the pipe coupling art. The selection of stainless steel in order to avoid corrosion is known. Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice.

Claims 26 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kowal et al (US 4,556,242) in view of Bradley (US 2,561,648), Moreiras et al (US 3,893,716) and Sugiyama et al (US 5,934,714).

The combination of Kowal et al, Bradley and Moreiras et al discloses the claimed device except for the particular structure of the ferrule being case hardened. Sugiyama et al discloses that is known in the prior art to provide a

Art Unit: 3679

similar type coupling having a case hardened ferrule in order to allow proper bite into the inserted tube. It would have been obvious to one having ordinary skill in the art at the time the invention was made to harden the ferrule of the Kowal et al, Bradley and Moreiras et al combination as taught by Sugiyama et al in order to provide a more secure coupling for the inserted tube.

Claim 64 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kowal et al in view of Bradley (US 2,561,648) and Sugiyama et al (US 5,934,714).

The Kowal et al fitting discloses the claimed device except for the particular angle of the camming surface (13) on the body (11) and that the ferrule is hardened. Bradley discloses a similar pipe joint wherein the camming surface on the body is 45 degrees (col. 2, ll. 18-23). It would have been obvious to one having ordinary skill in the art at the time the invention was made to fabricate the camming surface angle of Kowal et al to be at an angle of 45 degrees as taught by Bradley, in order to provide a more secure coupling for the inserted tube by optimizing the resultant compressive forces between the ferrule and camming surface. Sugiyama et al discloses that is known in the prior art to provide a similar type coupling having a case hardened ferrule in order to allow proper bite into the inserted tube. It would have been obvious to one having ordinary skill in the art at the time the invention was made to harden the ferrule of the Kowal et al and Bradley combination as taught by Sugiyama et al in order to provide a more secure coupling for the inserted tube.

Art Unit: 3679

Regarding the recitation that the ferrule is hardened using a low temperature carburization process, the method of forming the device is not germane to the issue of patentability of the device itself. Product claims must structurally distinguish from the prior art. See MPEP 2113.

Claims 34-44 and 47-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kowal et al (US 4,556,242) in view of Moreiras et al (US 3,893,716).

The Kowal et al fitting discloses the claimed device, however the particular hardness of the ferrule relative to the tube is not specified. Moreiras et al provides a similar type coupling and states that the tube is a low carbon steel having a hardness below 20 on the Rockwell C scale, and requiring the hardness of the tube to be at least 15 points less than the hardness of the cutting edges of the sleeves. The sleeves are preferably of a hardness of 50 on the Rockwell C scale. A hardness of 50 on the Rockwell C scale translates to a Vickers hardness of 513 (HV/10). A hardness of 1 on the Rockwell C scale translates to a Vickers hardness of 160 (HV/10). Moreiras et al thus discloses that the hardness of the ferrule is 3.21. This ratio is not 3.3, but is sufficiently close such that one of ordinary skill in the art would expect the relationship between the ferrule and tube to exhibit the same properties. Further, it is envisaged to be within the scope of Moreiras et al to make the sleeves harder than 50 Rc. It would have been obvious to one having ordinary skill in the art at the time the invention was made to fabricate the degree of hardness between the tube and

Art Unit: 3679

the ferrule as taught by Moreiras et al in order to provide a more secure coupling the for the inserted tube by optimizing the bite into the tube by the ferrule without over-deforming the tube and causing leakage at the bite area.

Claim 59 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kowal et al (US 4,556,242) in view of Moreiras et al (US 3,893,716) and Sugiyama et al (US 5,934,714).

The combination of Kowal et al and Moreiras et al as noted above discloses the claimed device except for the particular structure of the ferrule being case hardened. Sugiyama et al discloses that is known in the prior art to provide a similar type coupling having a case hardened ferrule in order to allow proper bite into the inserted tube. It would have been obvious to one having ordinary skill in the art at the time the invention was made to harden the ferrule of the Kowal et al, Bradley and Moreiras et al combination as taught by Sugiyama et al in order to provide a more secure coupling for the inserted tube.

Response to Arguments

Applicant's arguments filed 7/27/05 with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Regarding the arguments posited against Moreiras regarding hardness ratio, refer to the rejections and explanations provided above.

Art Unit: 3679

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James M. Hewitt whose telephone number is 571-272-7084.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Stodola can be reached on 571-272-7087. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


JAMES M. HEWITT
PRIMARY EXAMINER